

Understanding Your Computer: Operating Systems

Cyber Security Tip ST04-021

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The operating system is the most fundamental program that runs on your computer. It serves as the basis for how everything else works.

What is an operating system?

An operating system (OS) is the main program on a computer. It performs a variety of functions, including

- ✚ determining what types of software you can install * coordinating the applications running on the computer at any given time
- ✚ making sure that individual pieces of hardware, such as printers, keyboards, and disk drives, all communicate properly
- ✚ allowing applications such as word processors, email clients, and web browsers to perform tasks on the system (e.g., drawing windows on the screen, opening files, communicating on a network) and utilize other system resources (e.g., printers, disk drives)
- ✚ reporting error messages

The OS also determines how you see information and perform tasks. Some operating systems use a graphical user interface (GUI), which presents information through pictures (icons, buttons, dialog boxes, etc.) as well as words. Other operating systems can rely solely on text.

How do you choose an operating system?

In very simplistic terms, when you choose to buy a computer, you are usually also choosing an operating system. Although you may change it, vendors typically ship computers with a particular operating system. There are multiple operating systems, each with different features and benefits, but the following three are the most common:

- ✚ Windows - Windows, with versions including Windows Me, Windows 2000, and Windows XP, is the most common operating system for home users. It is produced by Microsoft and is typically included on machines purchased in electronics stores or from vendors such as Dell or Gateway. The Windows OS uses a GUI, which many users find more appealing and easier to use than text-based interfaces.
- ✚ Mac OS X - Produced by Apple, Mac OS X is the operating system used on Macintosh computers. With the exception of a different GUI, it is similar to the Windows interface in the way it operates.
- ✚ Linux and other UNIX-derived operating systems - Linux and other systems derived from the UNIX operating system are frequently used for specialized workstations and servers, such as web and email servers. Because they are often more difficult for general users or require specialized knowledge and skills to operate, they are not very popular with home users. However, as they continue to develop and become easier to use, they may become more popular on typical home user systems.

Both the National Cyber Security Alliance and US-CERT have identified this topic as one of the top tips for home users.

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Note: This tip was previously published and is being re-distributed to increase awareness.

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